

CERTAMEN MELASTOMATACEIS XII.

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TIBOUCHINA INOPINATA Wurdack, sp. nov.

Sect. Lepidotae. A sectionis congeneribus differt floribus minoribus.

Ramuli obscure quadrangulati sicut petioli foliorum subtus venae primariae inflorescentia hypanthiaque modice pilis appressis squamatis ovato-lanceatis inconspicue eroso-ciliolatis (0.3-)0.5-1(-2) X 0.4-0.6 mm obsiti. Petioli 0.5-1 cm longi; lamina 5-8 X 1.5-2 cm anguste elliptica apice anguste gradatimque acuminato basi anguste acuta, rigidiuscula et integra, supra pilis ca. 1 mm longis et ca.  $\frac{3}{4}$  adnatis appressis sparsiuscule induta, subtus in superficie squamis plerumque 0.3-0.5 mm longis sparsiuscule obsita, trinervata nervis secundariis supra invisibilibus subtus planis et inconspicuis. Panicula multiflora ca. 30 X 16 cm; flores 5-meri breviter (3-7 mm) pedicellati, bracteolis 2 X 0.5-0.7 mm lanceato-oblongis ca. 2 mm infra hypanthii basim insertis mox caducis. Hypanthium (ad torum) 4.1-4.2 mm longum; calycis tubus 0.3-0.4 mm altus, lobis 1.2 mm longis triangularibus ad bases paulo remotis apice hebeti. Petala 7.5-8 X 5-6 mm ciliolata obovata apice asymmetricice rotundato. Stamina dimorphica glabra, filamentis 5 mm longis, thecis subulatis 0.6-0.7 mm crassis 5 vel 4 mm longis poro ventraliter inclinato, connectivis 2.5 vel 0.5 mm prolongatis appendicibus ventralibus 1.1-1.2 X 0.4-0.5 mm hebetibus. Stigma truncatum; stylus 7.5-8 X 5-6 mm ciliolata obovata apice asymmetricice rotundato. Stamina dimorphica glabra, filamentis 5 mm longis, thecis subulatis 0.6-0.7 mm crassis 5 vel 4 mm longis poro ventraliter inclinato, connectivis 2.5 vel 0.5 mm prolongatis appendicibus ventralibus 1.1-1.2 X 0.4-0.5 mm hebetibus. Stigma truncatum; stylus 7.5-8 X 0.3-0.6 mm glaber; ovarii apex dense setis paulo compressis erosulis 0.5-1 mm longis dense armatus.

Type Collection: G. L. Webster, Kim Miller, & Lillian Miller 12361 (holotype US 2530465), collected on the wooded slopes of Cordillera de Talamanca, 12 miles southeast of Cartago, Cartago, Costa Rica, elev. 1600 m, 15 July 1962. "Shrub 7 m; flowers pink."

The other three species in Sect. Lepidotae have dense lower leaf surface pubescence, few-flowered inflorescences, much larger flowers (calyx lobes 5-9 mm long, petals 15-30 mm long, anther thecae 7-9 mm long), and approximately isomorphic stamens. The discovery of an additional species of Tibouchina in this section of the genus, quite unexpected by me, again emphasizes the South American affinities of much of the Costa Rican flora; the relatives range in the Andes from Venezuela to central Peru.

The general aspect of T. inopinata, especially the large

inflorescences with relatively small flowers, is suggestive of Sect. Barbigerae, but the stamens lack the connective hair tuft characteristic of that species group. The only Central American member of Sect. Barbigerae, T. bipenicillata (Naud.) Cogn., occurs in Panama and Costa Rica and can be distinguished vegetatively from T. inopinata by the definitely 5-nerved leaves with non-squamate hairs on the lower surface; the Central American material of this species has denser lower leaf surface pubescence and is perhaps subspecifically distinct from the typical Colombia-Venezuela population. Costa Rican collections ascribed by Cogniaux to T. mathaei Cogn. are actually this variant of T. bipenicillata.

CONOSTEGIA INUSITATA Wurdack, sp. nov.

De congeneribus hypanthiis calyptrisque 4-alatis differt.

Frutex 1.5-2 m altus glaber vel primum minutissime sparseque furfuraceus mox glabratus; rami primum obscure quadrangulati demum teretes paulo infra nodos biperforati. Petioli 1.5-4 cm longi; lamina 15-30 X 7-13 cm membranacea obovato-oblonga vel elliptica apicem versus obscure undulato-serrulata dentibus ca. 5 mm inter se distantibus et 0.1-0.7 mm profundis apice per ca. 2 cm abrupte angustate acuminato basi anguste vel late acuta, breviter (1-2 cm) triplinervata (pare exteriore marginali debili neglecto) nervis secundariis 0.7-1 cm inter se distantibus venulis planis laxe reticulatis areolis irregularibus 1-3 mm latis. Paniculae terminales plerumque 5-11-florigerae ramis axeque quadrangulatis; pedicelli plerumque 14-17 mm longi, bracteolis mox caducis non visis ad hypanthii basim insertis. Hypanthium (ad torum) 10-12 mm longum 4-alatum, alis 0.4-0.7 mm altis; calyx calyptriformis longe acuminatus ca. 40 mm longus 4-alatus ad anthesim 2-3 mm supra torum dehiscens. Petala 4 intus apicem versus minutissime granulosa alioqui glabra 14-15 X 10-11 mm obovato-oblonga apice obtuso vel rotundato. Stamina numerosissima glabra; filamenta 4-7 mm longa; thecae 3.5-6 X 0.6 X 0.8-1 mm anguste lanceatae poro 0.2 mm diam. paulo ventraliter inclinato, connectivo simplici non prolongato. Stigma capitatum 3.5 mm diam.; stylus glaber; ovarium 10-loculare omnino inferum apice glabro.

Type Collection: P. C. Hutchison, J. K. Wright, & R. M. Straw 6057 (holotype US 2492341; isotypes UC, USM; 4 additional isotypes to be distributed), collected at lower Boquerón del Padre Abad, Prov. Coronel Portillo, Depto. Loreto, Peru, elev. 480 m, 25 July 1964. "Erect shrub 1.5-2 m on steep hillside. Largest leaves apical; leafless below. Flowers and buds strongly quadrangular. Petals white; filaments pink; anthers pale purple."

Paratype: Ramón Ferreyra 1173, from Boquerón, San Martín, Peru.

No other species of Conostegia has alate hypanthia and calyces (nor to my knowledge only 4 petals). In the one bud dissected, 96 stamens were counted, varying considerably in size but otherwise isomorphic; the stamens in number are the greatest

known to me in the Melastomataceae. The infranodal perforations are reminiscent of those found in Miconia flaccida Gleason, probably indicating myrmecophily. Killip & Smith 26184 (from Santa Rosa, Junín), cited in the Flora of Peru as doubtfully Meriania prunifolia D. Don, is surely an undescribed relative of C. inusitata; the fruiting Junín collection differs in the entire leaves and solitary flowers with multicostate (but not truly winged) hypanthia. When Conostegia is next revised, C. inusitata probably should be treated as infragenerically distinct from the other presently described species of the genus.

MICONIA LATERIFLORA Cogn. subsp. MONTICELLENSIS Wurdack, subsp. nov.

A subsp. typica dichasiorum floribus lateralibus 2-3 mm pedicellatis differt.

Type Collection: A. C. Smith 3571 (holotype US 1777379; isotype NY), collected on the northwestern slopes of the Kanuku Mountains in the drainage of Moku-moku Creek (Takutu tributary), British Guiana, elev. 150-400 m, 31 March-16 April 1938. "Shrub 3-4 m; petals and stamens white."

Paratypes: Venezuela: T. Lasser 1305 (NY), from Sta. Elena de Uairen, Edo. Bolívar. British Guiana: A. C. Smith 3665, from Mount Iramaikpang, Kanuku Mountains, elev. 650 m. Suriname: H. S. Irwin, G. T. Prance, T. R. Soderstrom, & Noel Holmgren 54492, 54648, 54788, 55091, all from the vicinity of Juliana Top, Wilhelmina Gebergte, elev. 275-800 m; B. W. 7220, from the Wilhelmina Gebergte.

In the wide-ranging typical element, the lateral flowers (as well as the terminal one) in each dichasium are sessile, the inflorescence nodes are minutely setulose with barbellate hairs ca. 0.2 mm long, and the leaf bases are acute to obtuse. In subsp. monticellensis, the inflorescence nodes are glabrous or very sparsely and caducously stellulate-furfuraceous and the leaf bases are obscurely cordate. In all material examined of the pedicellate-flowered subspecies, the ovaries were 3-celled; in the few suitable collections of the typical subspecies, the ovaries were 4-celled, but the limited sampling did not seem sufficient for conclusive use of this feature as a distinction. As previously noted in Mem. N. Y. Bot. Gard. 10(5): 168, the Amazon-Orinoco collections of the typical subspecies generally have much shorter external calyx teeth than those from Central America and Colombia, but a few Venezuelan collections (Steiermark 90086 from Miranda, Breteler 3842 from Delta Amacuro) somewhat bridge the dimensional gap in this feature.

Standley described a variant of M. lateriflora (Ossaea disparilis var. adenophora) as having the mature fruit glandular-setulose. Glandular-setulose fruits do occur in some South American material (Steiermark 87139 from Delta Amacuro and Steiermark 90086 from Miranda, Venezuela; Fanshawe 1983, British Guiana), but I have not yet seen any flowering or young fruiting material with hypanthia glandular-setulose nor have I found any collections with completely glabrous mature fruits; perhaps

these glandular-setulose hairs elongate rapidly on the completely mature fruit and are only obscure sessile glands in flower and young fruit. Miconia polita Gleason, from the Kaieteur Plateau, British Guiana, and adjacent Venezuela resembles M. lateriflora vegetatively (but with leaves somewhat firmer and marginally discolored when dry), but has larger 5-merous flowers; the pedicellate 5-merous fruits serve as a distinction from the "variant" of M. lateriflora with glandular-setulose mature berries.

MICONIA OBCONICA Gleason & Wurdack, sp. nov.

Sect. Octomeris. In systema Cogniauxii, M. atratae (Spring) Wawra et M. novemnerviae Naud. affinis, floribus pedicellatis differt.

Ramuli teretes sicut petioli laminarum venae primariae subtus inflorescentiaque pilis barbellatis debilibus demum caducis usque ad 0.5 mm longis modice induti. Petioli (0.5-)-2-3 cm longi; lamina (6-)-9-18 X (3.5-)-5-10 cm ovata apice anguste acuto basi paulo (0.4-0.8 cm) cordata, rigidiuscula et ciliato-serrulata dentibus 1-2 mm inter se distantibus ciliis gracilibus 1-2 mm longis, supra modice laxaque bullato-strigosa pilis gracilibus laevibus 1-2 mm longis basi ipsa conicis, subtus in nervulis superficieque modice setulosa pilis crispulis laevibus ornata, (5-)-7-nervata nervis secundariis 3-5 mm inter se distantibus, venulis subtus laxe elevato-reticulatis areolis 1-2 mm latis. Panicula multiflora vel submultiflora 6-11 X 4.5-8 cm; flores 5-meri, pedicellis 1.5-2 mm longis, bracteolis ca. 0.7 mm longis subulatis ante anthesim delapsis. Hypanthium (ad torum) 3.7 mm longum sparse setulis ca. 0.2 mm longis paucibarbellatis obsitum; calycis tubus 0.3 mm altus, lobis interioribus 0.6 mm altis oblati ciliolatis, dentibus exterioribus 0.3-0.4 mm longis conicis non eminentibus. Petala 8-8.5 X 4.6-6 mm ut videtur glabra sed sub lente minutissime granulosa oblongo-ovata, apice rotundato. Stamina isomorphica glabra; filamenta 5.7-6 mm longa; antherarum thecae 5.3-5.6 X 1.1 mm curvato-subulatae minute (0.2 mm) uniporae, connectivo nec prolongato nec appendiculato dorsaliter basim versus paulo elevato. Stigma punctiforme 0.2 mm diam.; stylus glaber 11.5 X 0.4-0.25 mm; ovarium 5-loculare 1/2-2/3 inferum, apice truncato-conico 1.5 mm alto modice puberulo, pilis 0.1 mm longis gracilibus glanduliferis.

Type Collection: G. B. Hinton 10361 (holotype US 2089733), collected in oak and pine forest at Vallecitos, Montes de Oca, Guerrero, Mexico, elev. 500 m, 24 June 1937. "0.5 m high."

Paratype: G. E. Crisman & W. D. Willis 160 (MICH), from 1.2 km east of Agua de Obispo, Guerrero, elev. 950 m, 10 June 1954.

The Brazilian M. atrata (ex char.) has the flowers sessile, the hypanthia glandular-setose, the petals puberulous outside, and the ovary 3-celled; M. novemnervia of Venezuela (ex char. & Macbride photograph 2599<sup>4</sup>) has the leaves stellate-tomentose beneath, the flowers sessile, and the petals only 6-7 mm long.



Certainly M. obconica has no immediate Central American relatives, spp. 69-71 of Cogniaux' monograph being quite different and with much smaller flowers. Miconia saxicola Brandegee (Gleason has so identified Rose 1932 from Tepic and I have followed him for recent collections from Sinaloa and Durango) has relatively broader leaves, inflorescence hairs in part gland-tipped, and slightly projecting external calyx teeth; as noted by Gleason, the general aspect of M. saxicola is suggestive of Clidemia or Heterotrichum (cf. C. matudae L. Wms.). Among the other Central American species of Miconia Sect. Octomeris, Gleason suggested that M. schlimii Triana was better placed in Sect. Amblyarrhena and M. melanotricha (Triana) Gleason in Sect. Chaenopleura; the anthers in the latter species are strongly suggestive of those in Charianthus. Two other Guerrero collections (MICH), Rhymes & Rowell 3856 (from 10 miles southeast of Colotlipa) and V. M. Hicks 3570 (from 8 miles southeast of Colotlipa), possibly are referable to M. obconica; both are rather inadequate specimens in young bud and the latter essentially lacks simple hairs on the lower leaf surfaces. For both M. obconica and M. heterothrix, Dr. Gleason had done dissection notes and drawings, so the joint attribution of the binomials is appropriate; the Hinton collections have been widely distributed under these names.

MICONIA HETEROTHRIX Gleason & Wurdack, sp. nov.

M. tepicanae Standl. affinis, foliis minoribus basim versus pilis simplicibus sparse indutis inflorescentiis hypanthiisque sparse vel modice glanduloso-setulosis differt.

Ramuli primum paulo quadrisulcati mox teretes sicut petioli modice stellulato-puberuli demum glabrati, sparse vel sparsissime et caduce setulosi (pilis sparse barbellatis gracilibus 0.3-1 mm longis) et interdum sparsissime caduceque glanduloso-setulosi. Petioli 1.5-2 cm longi; lamina 4.5-9(-11) X 3-5(-6) cm elliptico-ovata, apice breviter (0.3-1 cm) hebeti-acuminato vel acuto, basi paulo (0.2-0.4 cm) cordata vel late obtusa, firme membranacea et obscure distanterque undulato-serrulata (dentibus setuliferis), supra primum sparsissime strigulosa mox glabrata, subtus primum sparse setulosa (pilis simplicibus) et glandulis clavatis minutis modice ornatis, nervis primariis basim versus exceptis glabrata, 5(-7)-nervata nervis secundariis plerumque 4(-6) mm inter se distantibus, nervulis subtus planis laxiuscule reticulatis areolis ca. 1 mm latis. Panicula 6-12 (-15) cm longa submultiflora sicut hypanthia sparse stellulato-puberula et sparse vel modice glanduloso-setulosa; flores 5-meri, pedicellis 1.5-3(-5) mm longis, bracteolis lanceato-linearibus ca. 1 mm longis ante anthesim caducis vel subsistentibus. Hypanthium (ad torum) 2.8-3 mm longum; calycis tubus 0.1-0.2 mm altus, lobis interioribus 0.2-0.3 mm altis ovatis ad bases remotis, dentibus exterioribus obsoletis. Petala alba glabra 2.5 X 1.9-2 mm late obovata apice asymmetricice retuso. Stamina paulo dimorphica glabra; filamenta 2.8 vel 1.7 mm longa; antherarum thecae 2-2.1 X 0.7-0.8 X 0.5-0.6 mm oblongae uni-

porosae (poro 0.2 mm diam. paulo ventraliter inclinato) paulo vel distincte curvatae, connectivo ad basim ventraliter paulo (0.1-0.3 mm) prolongato truncato-retuso. Stigma punctiforme 0.1 mm diam.; stylus 4.5 X 0.25 mm centraliter plerumque glandulis paucis 0.1 mm longis ornatus in ovarii apicem 0.3 mm immersus; ovarium triloculare  $\frac{1}{2}$  inferum apice pilis glanduliferis 0.1-0.2 mm longis 5-12 ornatum.

Type Collection: G. B. Hinton 9936 (holotype US 1979367), collected in pine forest at Laguna-Paracho, Mina, Guerrero, Mexico, 12 Jan. 1936.

Paratypes (all Mexico): G. B. Hinton 10752, from Pilas, Mina, Guerrero, elev. 1760 m; G. B. Hinton 12710, from Puerto Zarzamora, Coalcomán, Michoacán, elev. 1680 m; R. McVaugh 22776, from 15 km south of Asseradero Dos Aguas, Michoacán, elev. 1650-1700 m (fruiting).

Miconia tepicana has entire leaf blades 13-15 X 8-9 cm and densely stellate-puberulous beneath (a very few gland-tipped hairs basally along the main veins), the inflorescence and hypanthia moderately stellate-puberulous but without gland-tipped hairs, rotund-ovate calyx lobes 0.5 mm long, and glabrous ovary apices; in stamens, petals, and style, the two species are alike. The two Michoacán collections of M. heterothrix have somewhat thinner and pseudo-plinerved leaves (inner pair of primaries paralleling the costa for 0.3-0.6 cm above the blade base) than specimens from Guerrero. Other relatives in floral structure of M. heterothrix are M. madrensis Standl. and M. glabrata Cogn.; both species have entire leaf blades and eglandular inflorescence hairs, with the latter having smaller flowers than its allies. All four species share the features of setulose vein axils on the lower leaf surfaces, basally bent anthers, non-expanded stigmas, and sparsely glandular-puberulous styles; the arcuate anthers are not typical for Sect. Amblyarrhena. The foliar character combination of plinervation and setulose axils gives these species somewhat the vegetative aspect of M. mexicana (Bonpl.) Naud. and its immediate allies, but the floral features negate any suggestion of intimate relationship. Dr. McVaugh has twice collected (14239, 21324) in Jalisco plants which at first glance seem specifically different (attenuated stellulate pubescence, large thin leaves with caducously setulose petioles) from M. madrensis; however, I believe them probably to be only ecads, perhaps subspecifically separable when the Rose locality in Tepic yields further samples of the typical variation.

The general aspect of M. heterothrix is somewhat reminiscent of the species group around M. ravenii Wurdack (Phytologia 14: 270. 1967), but all these species have straight and rather elongate anthers. Incidentally I can find no reason for the separation of Clidemia glandulifera Cogn. (Bot. Gaz. 20: 289. 1895) from Miconia tuerckheimii Cogn. (Bot. Gaz. 16: 5. 1891); because of the relationship with M. ravenii, I prefer at present to treat the species in Miconia. Of course the epithet tuerckheimii is preempted in Clidemia by C. tuerckheimii (Donn. Sm.) Gleason.

MICONIA DIVISORIANA Wurdack, sp. nov.

M. centrodesmae Naud. affinis, foliis minoribus non plinervatis ramulis pilis stipitato-stellatis ornatis differt.

Ramuli teretiusculi sicut petioli foliorum subtus venae primariae basim versus pilis stipitato-stellatis (stipite 0.5-1.2 mm longo ramulis ca. 0.1 mm longis) densiuscule ornati et pilis stellulatis sessilibus sparse vel modice induti. Petioli 0.6-1.2 cm longi; lamina 5-11 X 2-4 cm anguste elliptica, apice anguste acuto, basi late acuta vel obtusa, fragilis et integra, pilis appressis 0.7-1 mm longis simplicibus laevibus densiuscule ciliolata, supra primum pilis stellulatis et stipitato-stellatis sparse ornata nervis primariis exceptis mox glabrata, subtus in venulis superficieque glabra, trinervata (pare inframarginali tenui neglecto) nervis secundariis 0.5-0.7 cm inter se distantibus supra insculptis subtus creberrime elevatis nervulis planis laxe reticulatis areolis irregularibus 1-2 mm latis. Panicula submultiflora axe arcte refracto modice stellulato-puberulo et basim versus sparse pilis stipitato-stellatis ornato; flores 4-meri breviter (0.5-1.5 mm) pedicellati, bracteolis setuliformibus ca. 0.7-0.9 mm longis ca. 0.1-0.3 mm infra hypanthii basim insertis. Hypanthium (ad torum) 1.5 mm longum sparse stellulato-puberulum et apicem versus sparsissime setulosum; calyx hyalinus ca. 0.5 mm altus in alabastris clausus ad anthesim dehiscens, dentibus exterioribus setuliformibus ca. 0.3 mm longis; torus intus dense puberulus pilis clavatis 0.05 mm longis. Petala glabra 2 X 0.9 mm lanceata apice hebeti-acuto. Stamina isomorphica glabra; filamenta 1 mm longa; antherarum thecae 1 X 0.4 X 0.4 mm, apice minute (0.1 mm) uniporoso, connectivo non prolongato ventraliter exappendiculato dorsaliter dente hebeti 0.4 mm longo descendente ornato. Stigma punctiforme; stylus 3 X 0.25-0.1 mm glaber in ovarii apicem paulo immersus; ovarium 4-loculare 2/3 inferum, apice 8-angulato conico in angulis sparsissime setuloso setulis 0.05 mm longis.

Type Collection: Ramón Ferreyra 1669 (holotype US 2100724; isotype USM), collected in tropical forest at Divisoria, Prov. Coronel Portillo, Depto. Loreto, Peru, elev. 1500-1600 m, 28 Feb. 1947. "Arbusto 1.5-2 m. Flores amarillentas."

Paratype: F. Woytkowski 34516 (UC), from Divisoria, Huánuco, Peru, elev. 1500-1600 m, 12 Sept. 1946. "Plant 1.6 m tall; leaf top glossy, underneath pale green. Flowers cream-yellow; calyx green; stalk dark purple."

While the petal shape of M. divisoriana perhaps would superficially indicate a relationship to Leandra, the obvious similarity in inflorescence bracteoles, stamens, and pistil are sufficient phylogenetic reminders of M. centrodesma; this presumptive relative lacks stipitate-stellate pubescence and has much larger plinerved leaves. Certainly there are no obvious Andean relatives of M. divisoriana in either Leandra or Ossaea. Judging from the similarities, Clidemia trichopoda Gleason should also be placed in the M. centrodesma alliance, but I have not yet seen flowering material of that Costa Rican species; a recent collection, fruiting as were the specimens available to Gleason,

is Schnell 644 from Valle Escondido, Cartago.

MICONIA MAROANA Wurdack, sp. nov.

Sect. Miconia, Subsect. Glomeratiflorae. M. martinianae Gleason affinis, foliis 3(-5)-nervatis ad basim acutis differt.

Ramuli paulo compressi demum teretes sicut folia subtus inflorescentia hypanthiaque pilis pinoideis 0.2-0.5 mm longis ravis vel brunneis omnino velati. Petioli 2-3 cm longi; lamina 14-20 X 5-9 cm oblongo-elliptica vel elliptica, apice hebeti-acuto vel breviter subabrupteque per 1-1.5 cm acuminato, basi late acuta, crassiuscula et integra, supra glabra, trinervata (pare exteriore marginali neglecto) nervis secundariis 0.6-0.8 cm inter se distantibus supra crebre impressis subtus prominenter elevatis nervulis subtus subdense reticulatis areolis ca. 0.4 mm latis ob pilos plerumque occultis. Panícula subspici-formis 8-11 cm longa, ramis brevissimis oppositis crassis 0.3-0.7 cm longis; flores 5-meri ad ramorum apices multiglomerati sessiles, bracteolis 2-2.5 X 1 mm persistentibus. Hypanthium (ad torum) 2.5 mm longum intus sparse gracili-strigulosum; calycis tubus 0.9-1 mm altus intus densiuscule puberulus, lobis interioribus 0.5 mm altis rotundatis intus sparsiuscule puberulis, dentibus exterioribus hebeti-subulatis ca. 0.3 mm eminentibus. Petala minutissime granulosa 2.4-2.5 X 1.5 mm oblongo-ovovata apice paulo retuso. Stamina glabra in forma isomorphica in dimensionibus paulo anisomorphica; filamenta 3.5 vel 3 mm longa; antherarum thecae 4.4-4.6 vel 3.1-3.3 mm subulatae minute uniporosae, poro ventraliter inclinato, connectivo non prolongato ventraliter bilobato et interdum glandulis paucis ornato. Stigma truncatum non expansum; stylus 5 X 0.3 mm basim versus sparse granulosis in ovarii apicem 0.3 mm immersus; ovarium 3-loculare ad basim ipsam ovuliferum 4/5 superum dense strigulosum pilis barbellatis gracilibus.

Type Collection: Llewelyn Williams 14431 (holotype US 1878445; isotype VEN), collected in clearings at Maroa, Río Guainía, Terr. Amazonas, Venezuela, elev. 127 m, 19 Feb. 1942. "Arbusto 2 m alto, tendido; flores blancas con filamentos amarillos."

The suggested relative, known only from Peru (San Martín) has 5-plinerved leaves with cordulate bases, petals externally stellate-pubescent, longer styles, and capitellate stigmas. The nearly free oblong densely pubescent ovaries and non-expanded stigmas serve as distinctions from both M. phanerostila Pilger (with plinerved leaves) and M. compacta Gleason (with thinner basally rounded leaves, less dense pubescence on the lower leaf surfaces, and glandular filaments).

MICONIA MULTISPICATA Naud.

M. perplexans Sprague, Trans. Proc. Bot. Soc. Edinb. 22: 432. 1905.

No differences are apparent between Jamaican collections of this species (Proctor 11750, Maxon 2793, Harris 6333, Harris & Britton 10540) and those from northwestern Venezuela (Yaracuy:



H. M. Curran 36. Barinas: Barinitas, Bernardi 3290. Zulia: southwest of Machiques, Steyermark 99939) and eastern Colombia (Meta: Idrobo & Schultes 596, 1221; Philipson, Idrobo, & Fernandez 1395; Sprague 31, type no. of *M. perplexans*, K. Norte de Santander: Cuatrecasas 13222, with leaves obscurely denticulate. Magdalena: Romero Castañeda 822, with large undulately denticulate leaves. Casanare: Uribe 3901. Caquetá: Perez Arbelaez 657. Vaupés: Cuatrecasas 7635). *Miconia ruficalyx* Gleason is very closely allied to *M. multispicata*, but is distinguishable by the finer reddish pubescence, linear-subulate (1.5 X 0.2-0.3 mm) and very early caducous rather than elliptic (2.5-4 X 1-3 mm) and subsistent flower bracteoles, and slightly different large anthers. Gleason's citation of a 4-celled ovary for *M. ruficalyx* does not represent the usual condition, my own dissections on various collections (including an isotype) indicating predominantly 3-celled ovaries. *Miconia ruficalyx* ranges from Trinidad (there including the material cited by Cogniaux and Gleason as *M. multispicata*) and eastern Venezuela to Brazil (Amapá); one apparent distributional anomaly is represented by Cuatrecasas 16745 (NY), from El Valle, Colombia, fruiting only, which agrees with Trinidad-Guiana collections in all obvious features. As suggested by Gleason, both *M. ruficalyx* and *M. multispicata* (especially the latter) are closely related to *M. eriodonta* DC. (synonym: *M. membranicalyx* Gleason) which has generally larger leaves and inflorescence bracts. *Miconia eriodonta* has rather coarse pubescence as in *M. multispicata* but larger anthers and generally longer inflorescence branches.

MICONIA AMISSA Wurdack, nom. nov.

Graffenrieda *stellipilis* Gleason, Am. Jour. Bot. 19: 742. 1932, non *Miconia stellipilis* Cogn., Bull. N. Y. Bot. Gard. 4: 360. 1907.

Gleason's description of *G. stellipilis* was based on materials in young bud and young fruit (both of which show inferior ovaries). However, Bang 492 (distributed as *M. eriodonta*), identical with Buchtien 7407 and 7408 except for slightly larger stellate hairs on the lower leaf surfaces, shows mature floral characters as follows: flowers 5-6-merous; hypanthium (to the torus) 1.7 X 3 mm; calyx 2.3 mm, with truncate or slightly undulate margins; petals narrowly obovate, 5 X 2.7-3 mm; stamens slightly dimorphic, glabrous; filaments 5 or 3.5-3.8 mm; thecae 2.4 or 1.8 mm, the connective prolonged 0.2 mm to the filament insertion and with a blunt dorsal appendage 0.3 or 0.2 mm long; stigma truncate, 0.6 mm diam.; style glabrous, 6 mm long; ovary essentially completely inferior, 3-4-celled. Another collection in young bud, Rusby 2726, is the same as Bang 492 and was the basis of Britton's and Cogniaux' erroneous reports (Bull. Torrey Club 17: 93. 1890; DC. Mon. Phan. 7: 793. 1891) of *M. eriodonta* in Bolivia. The closest relatives of *M. amissa* are not obvious. The general floral aspect is reminiscent of that in *M. versicolor* Naud., *M. kraenzlinii* Cogn., and *M. archeri* Wurdack, but the floral details are not consistent with any

intimate affinity with these Colombian species. In Cogniaux' monographic arrangement, M. amissa would perhaps best be placed near M. molybdea Naud., which differs in the very dense persistent tomentum on the lower leaf surfaces, definitely lobed calyx, and glandular bases of the stamen connectives.

MICONIA WOYTKOWSKII Wurdack, sp. nov.

M. matthaei Naud. affinis, foliis tenuioribus distincte undulato-denticulatis supra pilosis differt.

Ramuli sulcati sicut petioli laminarum costa supra et subtus inflorescentiaque modice setosi, pilis gracilibus rufidulis 4-6 mm longis laevibus ad nodos densissime aggregatis. Petioli 1-2 cm longi; lamina (10-)15-23 X 4.5-11 cm oblongo-elliptica, apice subabrupte per 1-1.5 cm acuminato, basi obtusa vel rotundata, membranacea et distincte undulato-serrulata dentibus ca. 5 mm inter se distantibus et 1-2 mm profundis, supra et subtus sparsiuscule gracili-setosa, trinervata, venis secundariis 0.5-0.7 cm inter se distantibus nervulis supra obscuris subtus planis et densiuscule reticulatis areolis 0.2-0.3 mm latis. Panicula multiflora 15 cm longa; flores 5-meri sessiles in glomerulis interruptis vel ad ramulorum apices aggregati, bracteolis 2 X 0.2-0.3 mm linearibus usque ad anthesim persistentibus. Hypanthium (ad torum) 2.3 mm longum sparse stellulato-puberulum; calycis tubus 0.2 mm altus, lobis interioribus oblongis 0.6 mm longis extus sparse gracili-setosis, dentibus exterioribus brevibus non eminentibus gracili-setosis. Petala imperspicue granulosa 3.8-4 X 1.5-1.8 mm obovato-oblonga, apice plerumque paulo retuso. Stamina paulo dimorphica glabra; filamenta 4.5-5 vel 3.5-3.7 mm longa; antherarum thecae 2.3-2.5 X 0.4 vel 2.1 X 0.3 mm paulo subulatae, poro minuto ventraliter inclinato, connectivo vix (0.1 mm) prolongato ventraliter ad basim bilobulato lobulis utrisque glandulis sessilibus 1-3 ornatis. Stigma expansum 0.8 mm diam.; stylus 8 X 0.3-0.4 mm glaber in ovarii collo 0.4 mm immersus; ovarium 3-loculare  $\frac{1}{2}$  inferum, apice conico lobulato (lobulis 0.1-0.15 mm altis) et inconspicue setuloso setulis 0.1 mm longis.

Type Collection: F. Woytkowski 34407 (holotype UC 1013846; isotype UC), collected in a forest opening at Boqueron Padre Abad, Depto. Loreto, Peru, elev. 260 m, 21 Aug. 1946. "Shrub 3 m; stalk covered with brown curly hair; flowers white; calyx green."

Miconia matthaei has firm-membranaceous to subcoriaceous leaves which are essentially entire and glabrous above, but anthers and pistil similar to those of M. woytkowskii; incidentally Cogniaux' petal dimensions (8 mm long) for M. matthaei (copied also in the Flora of Peru) are surely erroneous, the corolla actually being 3-3.5 mm long. The other species bracketed in this relationship by Cogniaux, M. heteromera Naud., differs (ex char. and photograph) at least in the much smaller leaves, shorter pubescence, and few pedicellate flowers with subtruncate calyx limb. While M. woytkowskii is somewhat suggestive in general aspect of M. ericoclada Triana, that species

has shorter pale pubescence and quite different and smaller stamens; *M. erioclada* has recently been collected in Colombia (Río San Miguel, Putumayo, Cuatrecasas 11049).

*MICONIA MCVAUGHII* Wurdack, sp. nov.

Sect. *Amblyarrhena*. De affinitate proxima mihi incognita, sed ob hypanthia 5-alata bene distincta.

Ramuli teretes primum sparse setosi (pilis gracilibus laevibus 1-2 mm longis) mox glabrati. Petioli 1-2(-3.5) cm longi sparse breviterque setosi; lamina 6-12 X 2-4 cm lanceata, apice gradatim acuminato, basi late acuta, membranacea et obscure distanterque undulato-serrulata sparse ciliolata, supra margines versus sparsissima strigulosa, subtus in nervorum primariorum axillis modice setulosa alioqui glabra, 5-plinervata pare exteriore tenui pare interiore 0.7-1 cm supra basim subalternatim divergente nervis secundariis ca. 3 mm inter se distantibus supra obscuris subtus planis, nervulis subtus planis laxe reticulatis. Panicula pauciflora 5-6 cm longa glabra; flores 5-meri glabri, pedicellis 5-alatis 3 mm longis apicem versus expansis. Hypanthium (ad torum) 3.5 mm longum 5-alatum alis 0.7-1 mm altis; calycis tubus 1.2-1.3 mm longus, lobis interioribus 0.7 mm altis ovatis, dentibus exterioribus prominenter eminentibus ca. 3 mm longis acutis carinatis. Petala glabra 6-6.5 X 3.5-3.8 mm elliptico-oblonga apice truncato-rotundato. Stamina isomorphica glabra; filamenta 5 mm longa ca. 0.4 mm supra antherarum bases dorsaliter inserta; thecae 3.5-3.7 X 0.9-1 X 1.3-1.5 mm rectae anguste oblongae, poro apicali 0.15-0.2 mm diam., connectivo simplici dorsaliter basim versus per 1.3-1.5 mm paulo elevato. Stigma 0.3 mm diam. non expansum; stylus 9.5 X 0.6 mm glaber; ovarium 3-loculare  $\frac{1}{4}$  inferum apice rotundato collo nullo. Semina pyramidata angulata laevia 0.7 X 0.4-0.5 mm.

Type Collection: Rogers McVaugh 13978 (holotype MICH; isotype US), collected in pine forest south and west of the divide between Aserradero San Miguel Una and Durazno, west-facing slopes of Sierra de Manantlán, 24-32 km southeast of Autlán, Jalisco, Mexico, elev. 1700 m, 22-23 March 1965. "Shrub 1-2 m, occasional; flowers white."

Paratype: Rogers McVaugh 23209, from seaward-facing slopes of Sierra de Manantlán, Jalisco, elev. 1500-1900 m, 22-23 March 1965. "Shrub 1-1.5 m, abundant; fruit strongly wing-angled."

The combination of winged pedicels and hypanthia, nearly superior 3-celled ovary, and punctiform stigma seems unprecedented. The hypanthial wings might suggest affinity with *M. bailloniana* Macbride, but that Peruvian species has the alae alternate with the sepals as well as apically glandular filaments and a 5-celled ovary. Although *M. incurva* Gleason and *M. schlimii* Triana have the same general anther form, both species have stellulate pubescence, terete hypanthia, expanded stigmas, and completely inferior 5-celled ovaries; *M. lundelliana* L. Wms. seems equally remote in vegetative and floral features. Several formicarial species of *Tococa*, all South American, have winged hypanthia, but are otherwise quite different from

M. mcvaughii.

MICONIA MILITIS Wurdack, sp. nov.

Sect. Amblyarrhena. M. pseudocentrophorae Cogn. affinis, foliis trinervatis indistincte denticulatis pedicellis longioribus differt.

Frutex vel arbor parva 3-5 m alta. Ramuli teretes sicut petioli foliorum subtus venae primariae inflorescentiaque pilis pinoideo-stellulatis 0.1-0.2(-0.3) mm longis modice vel dense induti. Petioli 1-2(-3) cm longi; lamina 4-8(-10) X 2-4 cm elliptica vel oblongo-elliptica, apice acuto vel paulo hebeti-acuminato, basi acuta vel anguste obtusa, chartacea et indistincte serrulata dentibus 0.1-0.2 mm profundis et 1-2 mm inter se distantibus ciliis conicis 0.1-0.2 mm longis, supra plana centraliter glabra margines versus sparse vel sparsissime strigulosa setulis conicis crassis 0.2-0.3 mm longis, in costa basim versus sparse setulosa pilis usque ad 0.5 mm longis barbellatis demum caducis, subtus in venis secundariis primum sparse stellulato-puberula demum glabrata in superficie glabra, trinervata (pare inframarginali tenuissimi neglecto) nervis secundariis 2-3 mm inter se distantibus venulis subtus planis densiuscule anastomosantibus areolis 0.3-0.5 mm latis. Panicula submultiflora 3-5 cm longa, ramulis pilis obscure barbellatis erectis usque ad 1 mm longis sparse indutis; flores 5-meri in glomerulis 3-8-floris umbellatim dispositi, pedicellis 1.5-2 mm longis, bracteolis inconspicuis 0.5-0.7 mm longis lanceatis persistentibus ad pedicellorum bases insertis. Hypanthium (ad torum) 2.3-2.4 mm longum sparse vel modice stellulato-puberulum; calycis tubus 0.2-0.3 mm altus, lobis interioribus 0.1-0.15 mm altis, dentibus exterioribus conicis lobos interiores aequantibus. Petala alba dense minutissimeque granulosa 1.6-1.8 X 1.7-1.8 mm suborbicularia apice paulo emarginato. Stamina isomorphica glabra; filamenta 2.3-2.5 mm longa; antherarum thecae 1.6-1.8 X 0.6 X 0.6 mm oblongae poro 0.2 mm diam., connectivo non prolongato dorsaliter ad basim dente hebeti descendente 0.1-0.15 mm longo ornato. Stigma expansum 0.6 mm diam.; stylus 4.5 X 0.4 mm glaber in ovarii apice 0.3-0.4 mm immersus; ovarium (3-)4-loculare 3/4 inferum apice glabro.

Type Collection: Rzedowski & McVaugh 160 (holotype MICH), collected in mesophytic forest 2 km northeast of Campamento El Gallo, granitic southwest slopes of Cerro Teotepec, 17°28' N, 100°13' W, Guerrero, Mexico, elev. 2650 m, 27-29 Jan. 1965.

Paratypes (all from Guerrero, flowering unless otherwise noted): Rzedowski 16479 (MICH, US), from Aserradero Agua Fria near Tlacotepec, elev. 2600 m, 10 April 1963; Rzedowski 16412 (MICH, US), from 5 km west of Camotla, Mun. Chichihualco de Leonardo Bravo, elev. 2600 m, 8 April 1963; Feddema 2790 (MICH, US), from 10 km. west of Camotla, Mun. Chichihualco about 40 km west of Chilpancingo, elev. 2500 m, 1 Dec. 1963; E. W. Nelson 7052 (US), from Omilteme (near Chilpancingo, fide Goldman), elev. 2200 m, 25 May 1903 (fruiting).

The Ecuadorian M. pseudocentrophora has distinctly 5-nerved



subrigid leaves with marginal teeth 1 mm apart and 0.3 mm deep, as well as pedicels at anthesis averaging about 1 mm long and elongate-pinoid hairs ca. 0.5 mm long along the primary veins on the lower leaf surfaces (rather than pinoid-stellulate hairs 0.1-0.2 mm long); both species are remarkably alike in floral details, especially in the glabrous ovaries. Two other Peruvian relatives, *M. centrophora* Naud. and *M. chrysanthera* Cogn. have setulose ovary apices; Gleason's notes on the Berlin type of the latter species indicated a glabrous ovary, but recent topotypical material (Hutchison & Wright 5064) and other Cajamarca collections all have setulose ovaries. The geographic gap in the distribution of such a closely knit species-group is rather disconcerting. Several of the collections of *M. militis* had first been referred to *Leandra* because of the general vegetative resemblance to the *L. subseriata* (Naud.) Cogn.-*L. melanodesma* (Naud.) Cogn. group; however those species have acute petals (pointed buds) and a basically different inflorescence, the sessile flowers being subsecund on the short ultimate branches (rather than umbellulate or verticillate).

*MICONIA TACANENSIS* Wurdack, sp. nov.

Sect. *Amblyarrhena*. *M. amabili* Cogn. affinis, foliis angustioribus differt.

Ramuli argute quadrangulati sicut petioli laminarum venae primariae subtus inflorescentiaque pilis pinoideis 0.1-0.2 (-0.3) mm longis demum caducis densiuscule induti. Petioli 1.5-3.5 cm longi; lamina 7.5-15.5 X 3-5.5 cm elliptica vel oblongo-elliptica, apice hebeti-acuto, basi late acuta vel obtusa, integra et subcoriacea, ubique in superficie primum sparse stellulato-puberula mox glabrata, trinervata (pare exteriore tenuissimi neglecto) nervis secundariis 3-5(-7) mm inter se distantibus venulis subtus planis laxe reticulatis areolis ca. 1-1.5 mm latis. Panicula 9-12 cm longa multiflora; flores 5-meri, pedicellis crassis ca. 1 mm longis, bracteolis mox caducis non visis. Hypanthium (ad torum) 2.5 mm longum sparse stellulato-puberulum; calycis tubus 0.5 mm altus, lobis interioribus 0.4-0.5 mm altis oblongis rotundatis ciliolatis, dentibus exterioribus inconspicuis appressis non eminentibus. Petala 2.3 X 2.3-2.4 mm suborbicularia intus densiuscule granulosa. Stamina isomorphica; filamenta 2.5-2.7 mm longa sparse glanduloso-puberula pilis 0.1 mm longis; antherarum thecae 2-2.1 X 0.6 X 0.7 mm oblongae, poro 0.25-0.3 mm lato septo non emergente, connectivo non prolongato exappendiculato dorsaliter basim versus paulo elevato. Stigma peltatum 1.3 mm diam.; stylus (paulo immaturus) 3 X 0.6 mm sparse glanduloso-puberulus in ovarii apice 0.8 mm immersus; ovarium 3-loculare 1/3 inferum, apice 1.5 mm alto (collo incluso) truncato-conico pilis paucis glanduliferis 0.1 mm longis ornato.

Type Collection: *E. Matuda* 2939 (holotype MICH; isotypes MICH, US), collected west of Volcán Tacana, Chiapas, Mexico, elev. 2800 m, 30 March 1939. "Arbol 8-10 m, diam. 30-35 cm."

The suggested Bolivian relative has leaves 20 X 11-12 cm

and branchlets obtusely sulcate-quadrangular; other relatives include those South American species discussed in the description of M. saltuensis Wurdack (Phytologia 14: 272-273. 1967). In Cogniaux' monograph, M. tacanensis would probably key to the elusive M. denticulata Naud., which has (ex descr. and Macbride photograph) similar sharply quadrangular branchlets but apically denticulate leaf blades, smaller flowers (hypanthium plus calyx tube 2 mm long, petals 1 mm long), and punctiform stigmas. Among the Central American species of Miconia, M. tonduzii Cogn., M. hemenostigma Naud., and M. alpestris Cogn. have somewhat the general aspect of M. tacanensis, but all have broadly bipored anthers (Sect. Cremanium).

MICONIA LUCIDA Naudin subsp. PARIENSIS Wurdack, subsp. nov.

Foliorum venulis subtus planis floribus paulo minoribus differt.

Type Collection: J. A. Steyermark 94915 (holotype US 73534; isotype VEN), collected in cloud forest on top of Cerro de Humo, Peninsula de Parí, Edo. Sucre, Venezuela, elev. 1273 m, 2 March 1966. "Tree 3 m; leaves subcoriaceous, deep green above, paler rich green below with rose-red midrib and petiole or suffused magenta below; rachis rose-red; pedicels and calyx pale green suffused carmine; petals spreading, white with carmine-rose; filaments rose-magenta. Vern. name: rayillo."

Paratypes (both Peninsula de Parí, Sucre): J. A. Steyermark & M. Rabe 96341, from north-facing slopes of Cerro de Humo, elev. 700-800 m; J. A. Steyermark & M. Rabe 96385, from north-facing slopes of Cerro de Río Arriba, elev. 700 m.

The Cerro de Río Arriba paratype has somewhat larger leaves than the other two collections, conforming in this respect to the typical subspecies. Through the courtesy of the Museum d'Histoire Naturelle in Paris, I have been able to examine the holotype (Linden 307, from the Andes of Trujillo and Merida) of M. lucida subsp. lucida, still the only known collection; this Andean material has the secondary veins and venules of the leaves on the lower surface finely elevated-reticulate, as well as flowers about 1/3 larger than those of the eastern subspecies (hypanthium plus calyx 3.3-3.4 mm long rather than 3 mm; petals 5.3-5.5 mm long rather than 4.5-5 mm; anthers 2.3-2.4 mm long rather than 1.8 mm). Miconia roraimensis Ule is closely related to M. lucida, but has a definitely lobed calyx and smaller petals. An Andean relative of M. lucida is M. nitidissima Cogn., with basally rounded leaves, larger flowers, and lobed calyx limb; Dr. Gleason had indicated in his melastome notebook that M. nitidissima was misplaced in Sect. Tamonea, having anthers as in Sect. Amblyarrhena. Miconia lucida vegetatively is quite like M. curvipetiolata Cogn. & Gleason ex Gleason; that Colombian species, however, has subulate anthers like those of its near relatives in Sect. Tamonea (spp. 40-44 of Cogniaux' monograph) and indeed the mysterious M. foliosa Triana may well be an earlier name for it. I have not encountered, at least in the melastomes, any geographic range similar to that of the two

subspecies of *M. lucida*. I would expect at least some geographically intermediate collections from the coastal cordillera near Caracas.

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ADDITIONAL NOTES ON THE GENUS VERBENA. VII

Harold N. Moldenke

VERBENA [Dorst.] L.

Additional bibliography: Robin, Fl. Louis. 385. 1807; Raf., Fl. Ludovic., pr. 1, 39, 128, 139, & 155. 1817; H. Becker, Über Keimung Verschied. Früchte [thesis] 1—129. 1912; Wolden, Proc. Iowa Acad. Sci. 39: 122—123. 1934; G. E. Nichols, Ecology 15: 265. 1934; Goss, Calif. Dept. Agr. Bull. 26: 326—333. 1937; Anon., Seed Trade Buyers Guide 1937: 150—151. 1937; J. N. Martin, Proc. Iowa Acad. Sci. 50: 222, 224, & 227. 1943; F. M. & E. T. Turrell, Proc. Iowa Acad. Sci. 50: 185. 1943; Covas & Hunziker, Rev. Invest. Agr. Buenos Aires 8: 251—253. 1954; L. J. Bradley, Ferns & Flow. Pl. Audubon Cent. 67. 1955; Cave, Ind. Pl. Chromosome Numb. 1: 1 & 46 (1958), 1: Suppl. vii & 50 (1959), and 1: 48. 1960; Rahn, Bot. Tidssk. 56: 122. 1960; Solbrig, Madroño 15: 220. 1960; Cave, Ind. Pl. Chromosome Numb. 2: 63 & 136—137. 1961; Hellyer, Anat. Gard. Photo Album 184. 1961; M. A. Rau, Bull. Bot. Surv. India 3: 238. 1961; Deb, Bull. Bot. Surv. India 3: 315. 1961; Solbrig, Madroño 16: 267. 1962; Heit, Assoc. Offic. Seed Analysts Newsletter 37 (2): 17. 1963; Cave, Ind. Pl. Chromosome Numb. 2: 331. 1964; Almquist, Fl. Upsal. 213. 1965; Batten & Bokelmann, Wild Fls. East. Cape Prov. 125 & pl. 99 (9). 1966; Anon., Biol. Abstr. 48 (22): S.188. 1967; Raf., Fl. Ludovic., pr. 2, 39, 128, 139, & 155. 1967; L. V. Barton, Bibl. Seeds 313 & 813. 1967; Twisselmann, Wasmann Journ. Biol. 25: 327. 1967; Fulling, Ind. Bot. Record. Bot. Review 563. 1967; Moldenke, Phytologia 16: 87—106. 1968; Breck, Better Gardens 18. 1968.

Although the Wolden (1934) reference in the bibliography above is dated "1932", according to the late Dr. J. H. Barnhart the actual date of publication was probably 1934.

VERBENA ABRAMSI Moldenke

Additional bibliography: Twisselmann, Wasmann Journ. Biol. 25: 327. 1967; Moldenke, Phytologia 15: 484 (1968) and 16: 96. 1968.

Twisselmann (1967) states that this species is common in Douglas oak woodland in the Greenhorn Range, but rare in vernal poolbeds in northern Temblor Range in Kern County, California. He gives "*V. lasiostachys* in part" as a synonym.

VERBENA AMBROSIFOLIA f. EGLANDULOSA Perry

Additional bibliography: Moldenke, Phytologia 15: 484—486. 1968.